Global Database Needed To Guarantee Identification Of Victims In Mass Disasters

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An expert in forensic anthropology argues that the database should include computer records of citizens such as anthropological data, physiognomic characteristics, medical information, radiographic files, dental records and numbers of different identity documents. Tzipi Kahana believes that radiographic techniques, together with information from this database, are a reliable mechanism for identifying bodies after natural disasters or attacks.

Forensic Anthropology, as an independent discipline within the field of forensic science, has evolved since the early twentieth century in tandem with technological developments of the scientific world. One of its best tools has been the implementation of radiological techniques for positive identification of human remains.

A research conducted at the University of Granada warns of the need to create "immediately" a database of citizens, from all countries of the world, that include computer records of citizens such as anthropological data, physiognomic characteristics, medical information, radiographic files, dental records and numbers of different identity documents.

This work has been performed by Tzipi Kahana (former student at the Hebrew University of Jerusalem) at the Department of Physical Anthropology of the University of Granada, and directed by professors Miguel C. Botella López and Immaculada Alemán Aguilera. Its author argues that the creation of this database "is crucial to the proper thanatological management following natural disasters or attacks", in order to guarantee an accurate diagnosis of the data of death and to enable the identification of victims.

Tsunami in Thailand

Kahana worked with the Israel Police in the task of identifying bodies after the tsunami that hit Phuket (Thailand) in December 2004. They were the first to reach the area after the disaster and, along with other teams that arrived successively (Italy, Switzerland, Japan, Canada and Portugal), identified more than 600 corpses. She was also active in identifying victims of the terrorist attack on the Asociación Mutual Israelita Argentina (AMIA) which took place in Buenos Aires, in 1994.

In this work, the scientist has analyzed how new radiographic technologies comply with legal requirements of the forensic field, studying the progressive development of Forensic Radiology as a new discipline through its symbiotic relationship with Forensic Anthropology. Tzipi Kahana has based her research on her own experience in the field of forensic anthropology for 20 years and, for the first time, her work meets the new legal requirements, the magnitude of major catastrophes of 19th and 20th centuries, and technological advances of the modern world.

From her point of view, "it is essential" to carry out a radiographic examination of all human remains in the field of forensic identification, as this examination not only provides documentation of the recovered material, but it is useful both in the identification of skeletal trauma and in the location of teeth hidden in the tissues.

A crucial role

Tzipi Kahana stresses that radiological investigation, as part of the thanatological examination, "is very useful in cases of traffic accidents, gunshot injuries and identification of corpses." Furthermore, radiographic examination plays a crucial role in the positive identification of human remains on Forensic Anthropology and Odontology.

The effectiveness and usefulness of any identification technique depends on the speed at which ante mortem data are available. In Israel, the U.S. and UK, countries where there are no fingerprint records of all people, an average of 10% of all medico-legal cases are individuals or human remains whose identity is unknown. Of these, 80% were identified through radiographic comparisons during the 90s.

The UGR researcher points out that some of the degenerative changes of the spine "are excellent radiological features, useful for the identification of corpses and human remains", since, in general, "the radiographs of the spine contain a large number of individualizing features".

Useful vertebral features for necroidentification include conditions such as evidence of healed trauma, degenerative and infectious processes, congenital malformations and normal anatomic variations of the spinal structures.

Part of the results of this research has been published in scientific journals such as British Journal of Radiology, Journal of Forensic Identification, American Journal of Forensic Medicine and Pathology, Journal of Clinical Forensic Medicine and Forensic Pathology Reviews, among others.

Reference: Tzipi Kahana. Department of Physical Anthropology, University of Granada.

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